



April 15, 2020

Region of Waterloo
150 Frederick Street
Kitchener, Ontario
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Attention: David Welwood, Principal Planner

Shantz Station Pit Air Quality Assessment, Response to Air Quality Peer Review –
Technical Response

Mr. Welwood:

Dillon Consulting Limited (Dillon) had been retained by the Region of Waterloo (the Region) to provide a peer review of an air quality assessment performed for the proposed Capital Paving Inc. Shantz Station Pit, in the Township of Woolwich, Ontario (the Site). The assessment was performed by RWDI AIR Inc. and is summarized in the report "Capital Paving Inc. – Shantz Station Pit, Air Quality Assessment", dated May 14th, 2019 (the Report). Dillon provided a peer review of the report to the Region on December 8th, 2019, (the Review) and RWDI subsequently provided a response on February 4th, 2020 (the Response). This letter provides a technical review of the Response.

This letter summarizes the findings of our peer review.

1. Dillon has reviewed the provided dispersion modelling files and generally agrees with the approach and model set up. Dillon did not identify any significant errors in the provided modelling.
2. Dillon's Review of the Report noted that conifer trees were included in the Report as a dust control measure. Dillon notes that the Response and the BMPP refer to the conifer trees, but do not provide details such as the required height of trees, tree density, or assumed control efficiency. Therefore, Dillon cannot verify the effectiveness of the proposed conifer trees as a mitigation solution. Dillon notes that vegetation, such as trees, are recognized as a viable mitigative measure when designed appropriately. It is recommended that the proponent specify the height of trees and required tree density.
3. The BMPP recommends a road watering schedule which is dependent on ambient temperature and relative humidity. The watering frequency prescribed in the BMPP is reasonable and when combined with the additional episodic watering noted in the BMPP should allow for management of dust. The watering program

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should be monitored and the frequency of watering increased if off-property dust impacts occur.

4. Dillon recommends that the items noted in the BMPP with respect to the paved on-site roadway (i.e. monitoring, sweeping, and flushing based on the presence of visible track-out) be extended to the public roadway in proximity to the Site entrance.
5. The Response states that using 90th percentile ozone concentrations is sufficient for the purposes of this report. Dillon recommends that using 90th percentile ozone concentration will potentially under-predict NO₂ concentrations during peak ozone concentrations. However, based on the modeling files provided, NO₂ is not predicted to be in exceedance of any standard or criteria even assuming 100% conversion from NO_x to NO₂. Dillon, therefore, agrees that the differences in the two approaches will not change the conclusions or recommendations of the report.
6. The Report included a 200 m setback between residences and processing, within which all activities would require monitoring and control. Dillon has confirmed that this distance is supported by the provided dispersion modelling.
7. Dillon recommends that the wording in the BMPP and subsequent approvals issued by the Region be worded to require monitoring and control when activity is “within 200 m of a residential property”. The BMPP as written prescribes monitoring and control when activity is “within 200 m of a residence.” This recommendation is based on the protection of enjoyment of property.
8. There are three items where Dillon and RWDI disagree about the approach taken, which can be characterized as a disagreement regarding the applicable regulatory approaches of the undertaking. These areas are:
 - Inclusion of fugitive dust from storage piles and exposed lands in the assessment of emissions and dispersion modelling;
 - Inclusion of emissions from off-site haul trucks in the dispersion modelling; and
 - The inclusion of the Canadian Ambient Air Quality Standards (CAAQS), in addition to Ontario’s Ambient Air Quality Criteria (AAQC).

As this assessment is in support of a license application under the Aggregate Resources Act, it does not fall solely within any one of the following assessment regimes:



- Environmental Compliance Approval assessments made under Ontario Regulation 419/05 – Local Air Quality, which requires industrial facilities to assess their operations from an air quality perspective;
- Ontario's D-Series of Guidelines which pertain to land use compatibility between potentially incompatible land uses; or
- Air quality assessments completed in support of an Environmental Assessment.

In consideration of the above, Dillon provides the following context and recommendations:

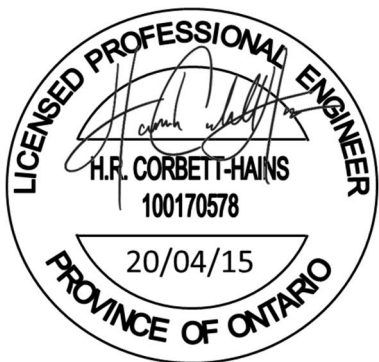
- The inclusion of all fugitive sources of dust within dispersion modelling is required for air quality impact assessments in support of an Environmental Assessment whereas, when specific criteria are met, Environmental Compliance Approval assessments allow for the exclusion of fugitive dust. Dillon recommends that in the case of greenfield development, such as the proposed undertaking, the more robust Environmental Assessment approach is appropriate. As such, it is recommended that all sources of fugitive dust should be included in the dispersion modelling assessment to identify if additional mitigation or operational changes are required to minimize the impact to receptors.
- Impact assessments made in support of an Environmental Assessment require the assessment of off-site transportation sources whereas an assessment in support of an Environmental Compliance Approval does not require these sources be included. Dillon recommends that in the case of greenfield development, such as the proposed undertaking, the more robust Environmental Assessment approach is appropriate. However, based on the anticipated vehicle volumes and the dispersion modelling provided, it is unlikely that the impact of the haul trucks will result in exceedances of the relevant criteria.
- The inclusion of the CAAQS in addition to the AAQC is typical for an impact assessment made under the Environmental Assessment framework. The inclusion of the CAAQS would introduce several new averaging periods for the contaminants which were included in the assessment. However, Dillon notes that the inclusion of the CAAQS is unlikely to change the conclusions of the Report.



Should you have any questions about our review, please don't hesitate to contact me.

Sincerely,

DILLON CONSULTING LIMITED



Hamish Corbett-Hains, M.A.Sc., P.Eng.
Associate

HCH:knp

Our file: 19-1803